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Authors have nothing to disclose

Introduction

Terminal deletions of chromosome 15q are associated with different degrees of pre- and post-natal growth failure, dysmorphic features, functional impairments and congenital anomalies. Although monosomies of 15q26 do not represent a classical contiguous gene syndrome, candidate genes for selected features have been identified. Short stature is referred to deletions of the Insulin-like growth factor-I receptor (IGF1-R) gene, located on 15q26.3. We demonstrate evidence of phenotype comparable with 15q26 monosomy in a family with microdeletion of 15q26.3 not involving IGF1-R gene.

Case Presentation

An 8 years old girl was referred for short stature and minor dysmorphic features. Past history showed congenital heart defect, repaired at 1.75 years, and infantile spasms since 6 months. IQ was mild impaired on verbal scales. After birth, height presented a progressive decline, achieving -3 SD, far from the target height (SD -1.44). She presented minor dysmorphisms including triangular facial shape, low placed and posterior rotated ears, mild down-slanting eyelid, micrognathia, overjet with prominent incisors, short philtrum, arched palate (See photos below). GH and IGF-1 productions were normal.



Array-CGH showed a microdeletion of the 15q chromosome, on the sub-terminal region 15q26.3 (chr15:100167695-102364500) of about 2.5 Mb not involving the IGF-1R gene. The same deletion was found in the father. Father's final height was found between the 10th and the 3rd centile. His past history was characterized by mild learning difficulties. He also presented truncal obesity and nocturnal sleep apneas (See photo above).

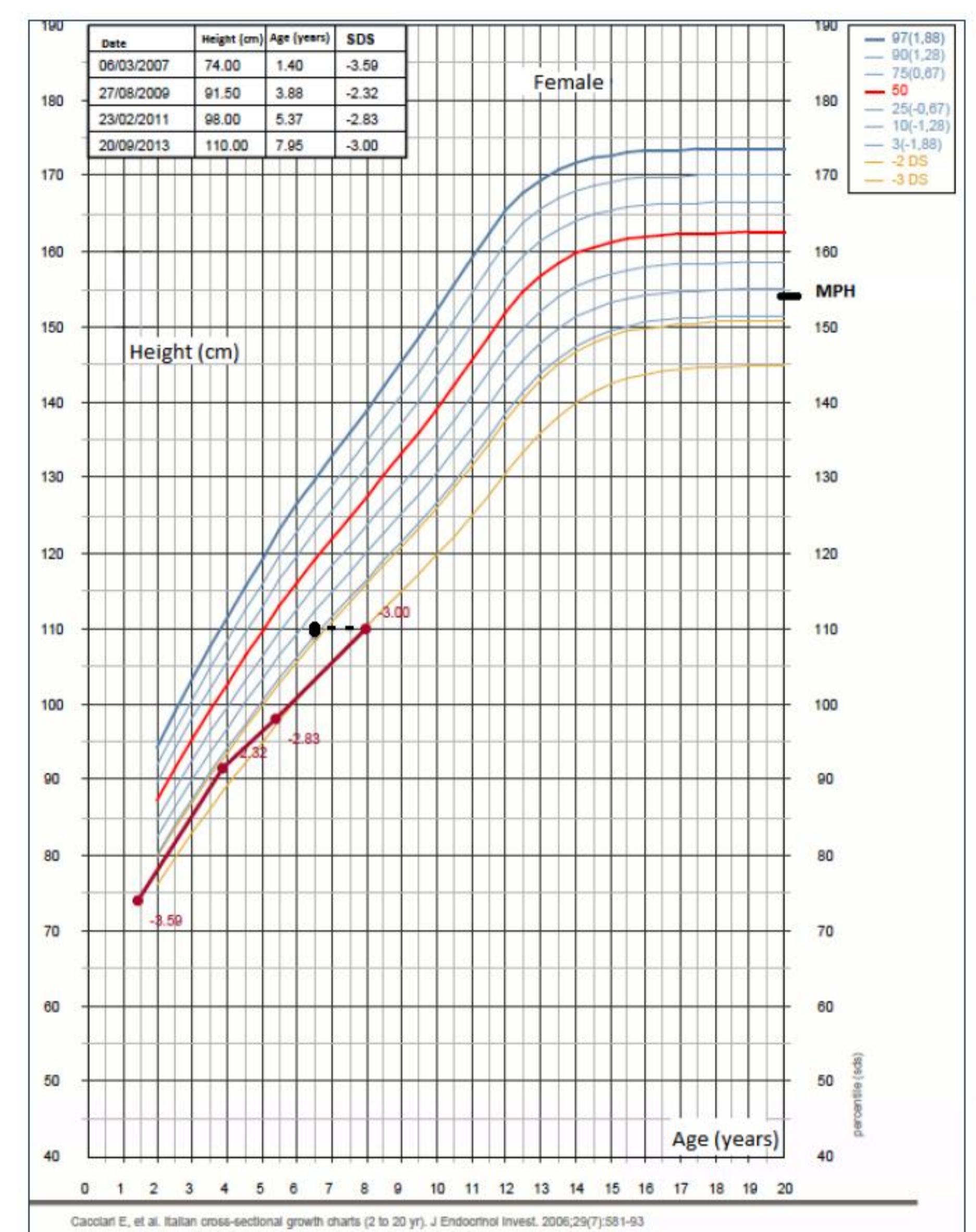
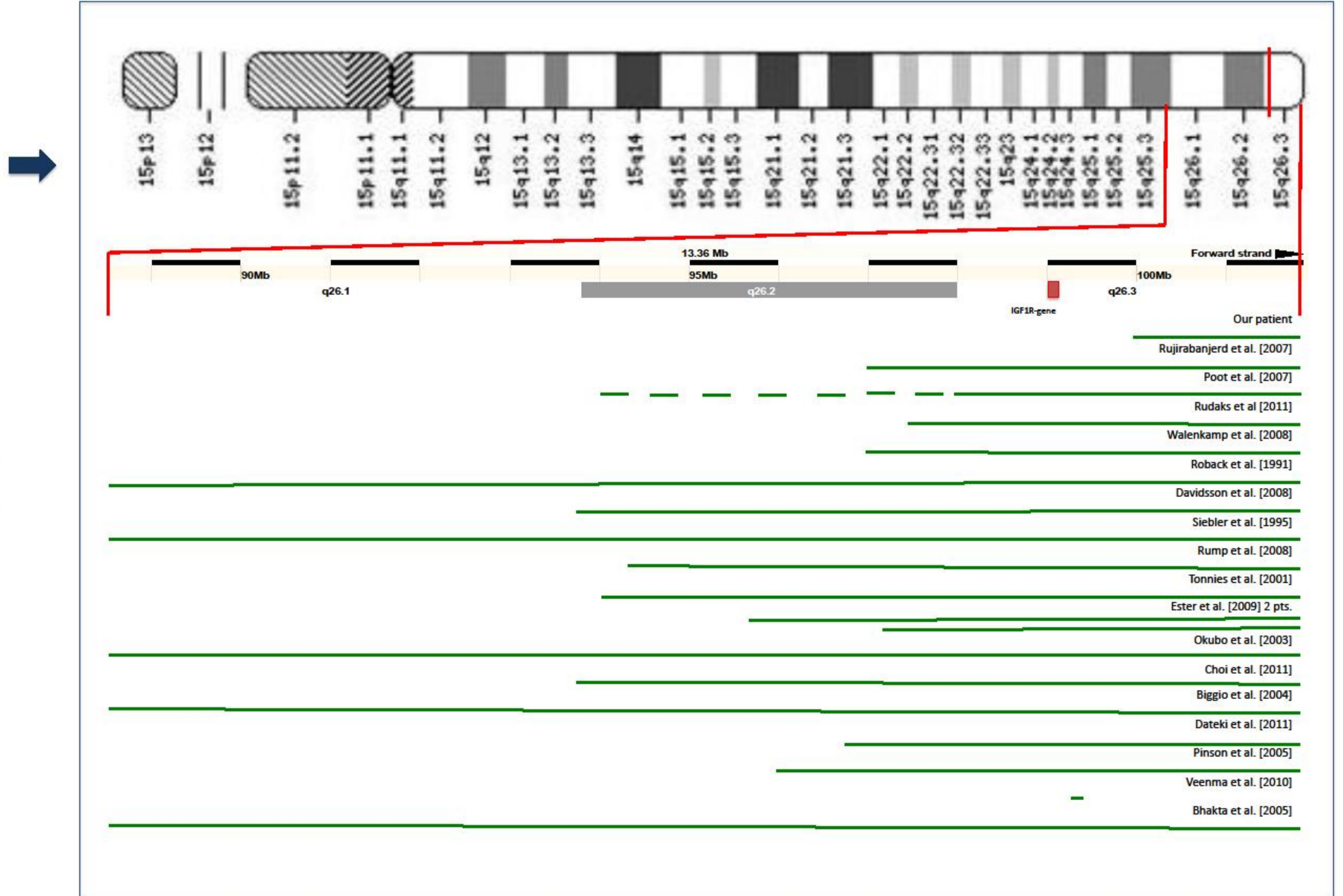


Figure 1: Growth chart for Female (2-20 years) according to the Italian reference range [---]. Values in cm and SDS are reported at the top of the figure. Bone Age is represented as black spot.

Figure 2: Array-CGH test/reference ratio plot of chromosome 15 displaying the 15q26.3 terminal micro-deletion and comparison of the deletion size with previously reported cases. Dotted lines refer to the absence of a characterized proximal breakpoint. The red rectangle represent the IGF-1R gene location on 15q26.3 region.



Conclusion

To the best of our knowledge, this is the first case of terminal 15q deletion with a phenotype similar to others reported, not involving the IGF-1R gene (Figure 2). Deletion's size seems not to be a predictor of the breadth of the phenotypic spectrum and the wide clinical variability suggests that other genetic mechanisms may be involved and need to be investigated.

References : 1- Cacciari E et al. Italian cross-sectional growth charts for height, weight and BMI (2 to 20 yr). J Endocrinol Invest. 2006 Jul-Aug;29(7):581-93.
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